

WHAT IS CLAIMED IS:

- 1 1. An assembly for visualization and access within a body cavity comprising:
2 a sleeve having a distal end, a proximal end, and a lumen therebetween;
3 a scope having a shaft with a distal end and a proximal end, the shaft being slidably
4 positionable in the lumen, a channel extending longitudinally through the shaft, and a lens in
5 the channel near the distal end,
6 a transparent bulb disposed at the distal end of the shaft outside of the channel and
7 optically aligned with the lens.
- 1 2. The assembly of claim 1 wherein the transparent bulb is mounted to the distal
2 end of the shaft.
- 1 3. The assembly of claim 1 wherein the transparent bulb is mounted to an elongate
2 sheath having a proximal end, a distal end, and a lumen therebetween, the shaft being
3 positionable in the lumen with the distal end of the shaft adjacent to the bulb.
- 1 4. The assembly of claim 1 wherein the transparent bulb is substantially rigid.
- 1 5. The assembly of claim 1 wherein the transparent bulb is made of a material
2 selected from glass, acrylic, polystyrene, and polycarbonate.
- 1 6. The assembly of claim 1 wherein the transparent bulb has a transverse cross-
2 sectional area larger than the transverse cross-sectional area of the shaft.
- 1 7. The assembly of claim 1 wherein the transparent bulb has a distal surface, the
2 distal surface being convex.

1 8. The assembly of claim 1 wherein sleeve has a length sufficient to reach an
2 interior of a patient's heart from outside the patient's chest.

1 9. The assembly of claim 8 wherein the sleeve has a length of at least about 15 cm.

1 10. The assembly of claim 1 wherein the transparent bulb comprises an expandable
2 member, the assembly further comprising an inflation lumen in communication with the
3 expandable member for delivering an inflation fluid thereto.

1 11. The assembly of claim 1 wherein the sleeve is substantially rigid.

1 12. A contact scope for visualization within a body cavity comprising:
2 an elongate sheath having a distal end, a proximal end, a lumen therebetween, and a
3 transparent bulb mounted to the distal end aligned with the lumen; and
4 a scope slidably positionable in the lumen, the scope having a shaft with a distal end, a
5 proximal end and a channel therebetween, and a lens mounted in the channel near the distal end;
6 wherein the distal end of the shaft may be positioned within the lumen adjacent to the
7 transparent bulb to allow viewing through the lens and the bulb.

1 13. The contact scope of claim 12 wherein the transparent bulb is substantially rigid.

1 14. The contact scope of claim 12 wherein the transparent bulb is made of a material
2 selected from glass, acrylic, polystyrene, and polycarbonate.

1 15. The contact scope of claim 12 wherein the transparent bulb has a transverse
2 cross-sectional area larger than the transverse cross-sectional area of the shaft.

1 16. The contact scope of claim 12 wherein the transparent bulb has a distal surface,
2 the distal surface being convex.

1 17. The contact scope of claim 12 wherein the transparent bulb comprises an
2 expandable member, the sheath further comprising an inflation lumen in communication with
3 the expandable member for delivering an inflation fluid thereto.

1 18. The contact scope of claim 12 further comprising a sleeve having an axial
2 lumen, the sheath being removably positionable in the axial lumen.

1 19. A repair system for repairing a septal defect in a patient's heart, the repair
2 system comprising:
3 a sleeve having a distal end, a proximal end, and a lumen therebetween;
4 a scope having a shaft with a distal end and a proximal end, the shaft being slidably
5 positionable in the lumen, a channel extending longitudinally through the shaft, and a lens in
6 the channel near the distal end,
7 a transparent bulb disposed at the distal end of the shaft optically aligned with the lens;
8 and
9 a septal defect closure device positionable through the lumen of the sleeve.

1 20. The repair system of claim 19 wherein the septal defect closure device
2 comprises a delivery shaft having a distal end, a proximal end, and a patch releasably held at
3 the distal end, the patch having a deployed configuration for positioning across a septal defect
4 and a collapsed configuration for positioning through the lumen in the sleeve.

1 21. The repair system of claim 19 wherein the septal defect closure device is
2 configured to apply a suture to the cardiac septum.

1 22. The repair system of claim 19 wherein the transparent bulb is mounted to the
2 distal end of the shaft.

1 23. The repair system of claim 19 wherein the transparent bulb is mounted to an
2 elongate sheath having a proximal end, a distal end, and a lumen therebetween, the shaft being
3 positionable in the lumen with the distal end of the shaft adjacent to the bulb.

1 24. The repair system of claim 19 wherein the transparent bulb is substantially rigid.

1 25. The repair system of claim 19 wherein the transparent bulb comprises an
2 expandable member, the assembly further comprising an inflation lumen in communication
3 with the expandable member for delivering an inflation fluid thereto.

1 26. The repair system of claim 19 wherein the transparent bulb has a transverse
2 cross-sectional area larger than the transverse cross-sectional area of the shaft.

1 27. The repair system of claim 19 wherein the transparent bulb has a distal surface,
2 the distal surface being convex.

1 28. The repair system of claim 19 wherein sleeve has a length sufficient to reach an
2 interior of a patient's heart from outside the patient's chest.

1 29. The repair system of claim 28 wherein the sleeve has a length of at least about
2 15 cm.

1 30. The repair system of claim 19 wherein the sleeve has an outer diameter of less
2 than about 12 mm.

1 31. The repair system of claim 19 wherein the sleeve is substantially rigid.

1 32. The repair system of claim 19 further comprising an access cannula having a
2 distal end positionable through a wall of the heart, a proximal end, and an access channel
3 therebetween, the sleeve being slidably positionable through the access channel into the heart.

1 33. The repair system of claim 32 wherein the access cannula has a flange on a
2 distal end thereof for engaging an interior wall of the heart.

1 34. The repairs system of claim 32 further comprising an obturator removably
2 positionable in the access channel.

1 35. The repair system of claim 34 wherein the obturator has a distal end configured
2 to penetrate the wall of the heart.

1 36. A method of locating an opening in a patient's heart, comprising:
2 positioning a visualization scope through a sleeve;
3 positioning a distal end of the visualization scope into the heart through a penetration in
4 a wall thereof;
5 viewing the opening through the visualization scope;
6 sliding the sleeve into the opening; and
7 removing the visualization scope from the sleeve.

1 37. The method of claim 36 further comprising the steps of:
2 positioning the visualization scope in a sheath outside the heart such that a distal end of
3 the visualization scope is adjacent to a transparent bulb on a distal end of the sheath; and
4 positioning the sheath in the heart through the sleeve;
5 viewing the opening through the transparent bulb.

1 38. The method of claim 36 further comprising:

2 positioning a repair device through the sleeve while the sleeve is positioned through the
3 opening; and
4 closing the opening with the repair device.

1 39. The method of claim 38 wherein the repair device comprises a patch which is
2 secured across the opening.

1 40. The method of claim 36 wherein the visualization scope and the sleeve are
2 positioned through an access cannula extending from outside the chest through the penetration
3 in the wall of the heart.

1 41. The method of claim 36 wherein the heart remains beating during each of said
2 steps.

1 42. The method of claim 36 wherein the opening comprises a septal defect.